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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/727,096	11/29/2000	Dennis L. Montgomery	42503 261928	6817

7590 10/26/2005

Pillsbury Winthrop LLP
Intellectual Property Department
1600 Tysons Boulevard
McLean, VA 22102

EXAMINER	
MAHMOUDI, HASSAN	
ART UNIT	**PAPER NUMBER**
2165	

DATE MAILED: 10/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/727,096	MONTGOMERY, DENNIS L.	
	Examiner	Art Unit	
	Tony Mahmoudi	2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-4,6,7,11,14,16-22,26,29,47 and 54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-4,6,7,11,14,16-21,29,47 and 54* is/are rejected.

7)☒ Claim(s) *22 and 26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/1/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 01-September-2005 was filed before the mailing date of the Notice of Allowance of 09-September-2005. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Allowable Subject Matter

2. Prosecution on the merits of this application is reopened on claims 2-4, 6-7, 11, 14, 16-21, 29, 47 and 54, now considered unpatentable for the reasons indicated below.

3. Applicant is advised that the Notice of Allowance mailed on 09-September-2005 is vacated. If the issue fee has already been paid, applicant may request a refund or request that the fee be credited to a deposit account. However, applicant may wait until the application is either found allowable or held abandoned. If allowed, upon receipt of a new Notice of Allowance, applicant may request that the previously submitted issue fee be applied. If abandoned, applicant may request refund or credit to a specified Deposit Account.

4. The indicated allowability of claims 2-4, 6-7, 11, 14, 16-21, 29, 47 and 54 is withdrawn in view of the newly discovered reference(s) submitted by the applicant in the Information Disclosure Statement dated 01-September-2005: Ageenko et al., *"Forward adaptive modeling for context-based compression of large binary images in applications requiring spatial access,"* 1999 IEEE, p. 757-761. (10-24-1999). Rejections based on the newly cited reference(s) follow.

Remarks

5. In view of the amendment filed on 13-July-2005 and the examiner's amendment of 30-August-2005, authorized by the attorney of record (see "interview summary", paper number 20050830-1), claims 2-4, 6-7, 11, 14, 16-22, 26, 29, 47 and 54 are presently pending in the application, of which, claim 17 is presented in independent form.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 2-3, 6-7, 16-18 and 20-21, 29 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ageenko et al ("*Forward adaptive modeling for context-based compression of large binary images in applications requiring spatial access,*" 1999 IEEE, pp 757-761, 10-24-1999) in view of Johns (U.S. Patent No. 6,366,289 B1.)

As to claim 17, Ageenko et al teaches a method of operating upon digital data (see *Abstract*, page 757) comprising the steps of:

partitioning the digital data into a plurality of blocks (see page 757, *Introduction*, where "tiling" is taught as "dividing the image into fixed size rectangular blocks"); and

creating a plurality of threads, such that each thread includes at least one of the plurality of blocks (see page 757, *Introduction*, where "threads" is read on "clusters"; i.e. "a better solution is to divide the image into clusters of C x C size"); and

operating upon each of the plurality of threads to obtain a plurality of compressed threads, each compressed thread including at least one compressed block of digital data (see page 758, *Forward-adaptive technique*, where "pixelwise compression of the clusters" is taught, and see page 759, *Compression-decompression*);

operating upon each of the compressed threads to eliminate each of the compressed threads and retain the compressed first blocks (see page 758, *Forward-adaptive technique*, where "independent decompression of the clusters" and providing "spatial access to the compressed image file" are taught);

creating a plurality of threads, such that each thread includes at least one of the plurality of compressed first blocks (see page 759, *Compression-decompression*, i.e., "the QM-coder is initialized and the model is restored each time that the compression of a new cluster starts"); and

operating upon each of the plurality of threads to obtain a plurality of compressed threads (see page 758, *Forward-adaptive technique*, where "pixelwise compression of the clusters" is taught), each compressed thread including at least one compressed second block of digital data (see page 759, *Compression-decompression*, i.e., "cluster indices are recorded and stored in the compressed file to indicate the starting points of the clusters in the compressed bit stream".)

Ageenko et al does not teach first thread and second thread (although he teaches "new clusters" in page 759, *Compression-decompression.*)

Johns teaches a method of displaying compressed and uncompressed blocks (see *Abstract*), in which he teaches first threads and second threads (see column 9, lines 29-45, where first and second decompressors are taught, decompressing "chunks" for client 1 and client 2.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Ageenko et al by the teaching of Johns et al, because including multiple threads would enable the system to creates and process different threads (clusters) of blocks of digital data for various portions of a large digital content (e.g. an image), so that only portions of the "image" desired by the client are retrieved and operated on for faster operations. For example, using multiple threads/cluster technique allows a new part of a large image to be retrieved,

decompressed and displayed, as the image is being scrolled by the user, as opposed to decompressing and displaying the entire image (see Ageenko et al, *Introduction*.)

As to claim 2, Ageenko et al as modified, teaches wherein the step of operating upon each of the first threads performs lossless compression (see Johns, column 20, lines 46-54.)

As to claims 3 and 18, Ageenko et al as modified, teaches wherein the step of operating upon each of the threads independently operates upon each of the plurality of threads (see Ageenko et al, page 758, *Forward-adaptive technique*, where it is taught that "each cluster is processed independently from each other".)

As to claims 6 and 21, Ageenko et al as modified, teaches the method further comprising the step of combining the compressed blocks in each of the plurality of compressed threads to obtain digitally compressed data (see Ageenko et al, page 758, *Forward-adaptive technique*, where "pixelwise compression of the clusters" is taught; and see Johns, figure 6, and see column 14, lines 52-55, where "combining the plurality of compressed threads" is read on "compressed chunks are linked together in a linked list format".)

As to claim 7, Ageenko et al as modified, teaches wherein the step of creating the plurality of threads includes the step of associating each of the plurality of blocks of digital data with one of the plurality of threads such that blocks within each of the

plurality of threads share certain common compression characteristics (see Ageenko et al, page 758, *Forward-adaptive technique* i.e., "the model is constructed from statistics gathered over the whole image and stored in the compressed file" where the model is used for start of compression of clusters; and see Johns, column 7, lines 62-66.)

As to claim 16, Ageenko et al as modified, teaches wherein the step of partitioning data includes the step of determining a size of each of the plurality of blocks taking data type of each block into account (see Ageenko et al, page 759, *Effect on the compression performance*; and see Johns, column 10, lines 45-59.)

As to claim 20, Ageenko et al as modified teaches wherein, during the step of operating upon each of the plurality of threads, the same compression algorithm used to operate upon each block is also used to operate upon the corresponding compressed block (see Ageenko et al, page 758, *Forward-adaptive technique*, where "pixelwise compression of the clusters" is taught, and see page 759, *Compression-decompression.*)

As to claim 29, Ageenko et al as modified, teaches wherein each first thread has an associated first metadata set (see Johns, column 6, lines 1-6.)

As to claim 47, Ageenko et al as modified, teaches wherein each first thread further includes control signals (see Johns, column 7, lines 62-66, where "control signal" is read on "control data".)

8. Claims 4, 11, 19 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ageenko et al ("*Forward adaptive modeling for context-based compression of large binary images in applications requiring spatial access,*" 1999 IEEE, pp 757-761, 10-24-1999) in view of Johns (U.S. Patent No. 6,366,289 B1), as applied to claim 17 above and further in view of Simms (U.S. Patent No. 5,586,280.)

As to claims 4, 19 and 54, Ageenko et al as modified, still does not teach wherein at least certain ones of the threads are independently operated upon in parallel.

Simms teaches a method for appending data to compressed records (see Abstract), in which he teaches wherein at least certain ones of the first threads are independently operated upon in parallel (see column 17, lines 16-20, and see column 19, lines 27-33.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Ageenko et al as modified, by the teachings of Simms, because having at least certain ones of the first threads are independently operated upon in parallel, would improve the system performance, resulting in a more efficient compression of the data in a reduced time period than a single compression process.

As to claim 11, Ageenko et al as modified, still does not teach wherein the step of creating each of the plurality of first threads uses a data type of each of the plurality of blocks so that each of the first threads contains blocks which have a similar data type.

Simms teaches the step of creating each of the plurality of first threads uses a data type of each of the plurality of blocks so that each of the first threads contains blocks which have a similar data type (see column 7, lines 11-16.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Ageenko et al as modified, by the teaching of Simms, because having the step of creating each of the plurality of first threads uses a data type of each of the plurality of blocks so that each of the first threads contains blocks which have a similar data type, would enable the system to categorize data into blocks of data with common characteristics amongst the data items.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ageenko et al ("*Forward adaptive modeling for context-based compression of large binary images in applications requiring spatial access,*" 1999 IEEE, pp 757-761, 10-24-1999) in view of Johns (U.S. Patent No. 6,366,289 B1), as applied to claim 17 above, and further in view of Morikawa et al (U.S. Patent No. 6,043,897.)

As to claim 14, Ageenko et al as modified, still does not teach the method further including the step of predicting an estimated compression time and estimated compression amount for each block.

Morikawa et al teaches an image forming apparatus (see Abstract), in which he teaches the step of predicting an estimated compression time (see column 2, lines 14-18) and estimated compression amount for each block (see column 5, lines 57-63.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Ageenko et al as modified, by the teaching of Morikawa et al, because including the step of predicting an estimated compression time and estimated compression amount for each block would enable the system to provide the user with information associated with compression of each block of data, as to how long the compression would take and how large the size of the compressed data would be after performing the operation on the block of data.

Allowable Subject Matter

10. Claims 22 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

11. There are presently no arguments pending in the application.

Conclusion

12. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 01-September-2005 prompted the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Tony Mahmoudi whose telephone number is (571) 272-4078. The examiner can normally be reached on Mondays-Fridays from 08:00 am to 04:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffery Gaffin, can be reached at (571) 272-4146.

tm

October 7, 2005

JEFFREY GAFFIN
SUPERVISORY PATENT EXAMINER